DOCUMENT RESUME

ED 362 022 FL 021 476

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TITLE Second Language Acquisition and the Subset Principle.
PUB DATE Oct 93
NOTE 15p.; Paper presented at the Annual Boston University Conference on Language Development (17th, Boston, MA, October 23-25, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Language Acquisition; *Language Research; Linguistic Theory; *Second Language Learning
IDENTIFIERS *Subset Principle

ABSTRACT

The idea is explored that the Subset Principle is available to first language learners but not to second language learners, and that this difference is responsible at least in part, for the fossilization that seems to be characteristic of second language acquisition. Several experiments are reviewed where it has been concluded that the parameter setting in second language acquisition fails to obey the Subset Principle. These studies involve the Case Adjacency, Configurationality, and Governing Category parameters. In each case, it is suggested that the parameter assumed to be involved is not, in fact, a subset parameter. Consequently, the experimental results are not relevant to the Subset Principle. It is also suggested that even if these studies did involve subset parameters, there is an alternative interpretation under which the Subset Principle may still be operative. (Contains 37 references.) (JP)

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Second Language Acquisition and the Subset Principle

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17th Boston University Conference on Language Development
October 23-25, 1992

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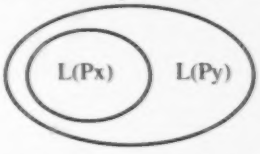
Introduction

In this paper, I examine the claim that the Subset Principle is not operative in (adult) second language acquisition. It has been suggested that the Subset Principle is available to first language learners, but not to second language learners, and that this difference is responsible, at least in part, for the fossilization that seems to be characteristic of second language acquisition. I intend to show that this hypothesis cannot be supported because of both logical and empirical problems. For other issues related to the Subset Principle, which I will not have time to address in this talk, see the references listed in (1) on the handout.

(1) For critique of the Subset Principle based learning theory, see Safir (1987) and MacLaughlin (1992).
For discussion of whether or not a subset problem actually arises for UG parameters, see Hermon (1992) and MacLaughlin (1992).

Within the Principles and Parameters approach to Universal Grammar, children acquire language by setting the parameters to match the input data. Although UG severely constrains the acquisition task, it may still be possible for a learner to arrive at an incorrect grammar through a mistake in parameter setting. In this event, the question arises as to how the learner could acquire the correct setting, under the (generally accepted) assumption that only positive evidence is available. In particular, a learning problem arises if the language generated by one value of a parameter is included in the language generated by the other value. This situation is illustrated in (2).

(2) A "subset parameter" with 2 values, x and y



If the target language instantiates the subset value (value X) and a learner incorrectly chooses the more inclusive or superset value (value Y), there will be no positive evidence to lead the learner back to the subset value. The learner will be stuck with an overgeneral grammar. Since first language acquisition, under normal circumstances, is successful, the learner must be able to avoid this subset learning problem somehow. The Subset Principle (Berwick, 1985; Manzini and Wexler, 1987; Wexler and Manzini, 1987) has been postulated in an attempt to solve this problem, in effect, by circumventing it altogether. According to the Subset Principle, the learner faced with

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a learning situation such as (2) is forced to choose the subset value (when both values are compatible with the input). A definition of the Subset Principle, from Wexler and Manzini (1987), is shown in (3).

(3) *Subset Principle* (Wexler and Manzini, 1987)
The learning function maps the input data to that value of a parameter which generates a language:
(a) compatible with the input data; and
(b) smallest among the languages compatible with the input data.

The issue of the availability of Universal Grammar to second language learners has become a topic of great interest in the field of second language research (see White, 1989b for an overview). Second language acquisition, like first language acquisition, is considered by many to proceed from positive evidence only,[1] in which case the same subset learning problem might arise for second language learners. If one accepts the hypothesis that learners are capable of setting UG parameters in the course of acquiring a second language, the question then arises as to whether or not the Subset Principle is available to guide that parameter setting.

Several researchers have investigated the role of the Subset Principle in second language acquisition. Some references are listed in (4).

(4) Studies investigating the operation of the Subset Principle in L2A
Case Adjacency: White, 1989a
Configurationality: Zobl, 1988
Binding: Finer and Broselow, 1986; Thomas, 1989; Hirakawa, 1990; Finer and Broselow, 1991; Finer, 1991.

The results of these studies have been taken to suggest that the Subset Principle is not available to second language learners (see the discussion in White, 1989b: chapter 6). White (1989b) proposes the hypothesis summarized in (5).

(5) *Subset Principle Difference Hypothesis*
"the results suggest that it is the Subset Principle which is no longer available to L2 learners, rather than UG itself. That is, ... UG and the parameter values are still available, but the ability to compute which value leads to the subset language is lost." (White, 1989b: 164)

Since (5) embodies a proposed difference between first and second language acquisition, I will refer to this hypothesis as the Subset Principle Difference Hypothesis.

White further suggests that the unavailability of the Subset Principle may be responsible for the "fossilization" that seems characteristic of second language acquisition:

(6) "Failure to reset parameters, then, will lead to fossilization, to the use of superset structures when the subset is actually required." (White, 1989b: 168).

In the remainder of this talk, I examine several experimental studies where it has been concluded that parameter setting in second language acquisition fails to obey the Subset Principle. These studies involve the Case Adjacency, Configurationality, and Governing Category parameters. In each case, I suggest that the parameter assumed to be involved is not, in fact, a

[1] See, for example, Schwartz, 1987, but see Bley-Vroman, 1989 for an opposing view.

subset parameter. Consequently, the experimental results are not relevant to the Subset Principle. In addition, I suggest that, even if these studies did involve subset parameters, there is an alternative interpretation under which the Subset Principle may still be operative. I conclude with some final remarks concerning the role of the Subset Principle in language acquisition.

Case Adjacency

White (1989a) tests the availability of the Subset Principle to second language learners by investigating their acquisition of the Case Adjacency parameter. The Case Adjacency parameter (Stowell, 1981; Chomsky, 1981) is meant (in part) to capture facts about the adjacency of the verb and its object. For example, in French, an adverbial may intervene between the verb and object, as shown in (7a). However, English does not allow this, as shown in (7b). Thus English is said to instantiate the [+ strict adjacency] value of the Case Adjacency parameter, while French intantiates [- strict adjacency].

(7) a. Marie fait lentement ses devoirs.
b. *Mary does slowly her homework.

White suggests that this parameter presents a subset learning problem (see also Berwick, 1985), as the [+ strict adjacency] option only allows sentences observing adjacency, while the [- strict adjacency] option allows sentences that either observe or violate adjacency. More concretely, the subset language, e.g., English, allows Verb-Object sequences; while the superset language, e.g., French, allows both Verb-Object and Verb-Adverb-Object sequences.

White investigated native French speakers learning English. With respect to the Case Adjacency Parameter, then, the first language instantiates the superset value and the second language the subset. She compared two hypotheses, shown in (8). According to the *subset* hypothesis (8a), the Subset Principle operates in second language acquisition just as in first language acquisition. This predicts that the French learners of English should be able to adopt the subset value of the Case Adjacency Parameter, so they should not permit adjacency violations in their second language. Under the *transfer* hypothesis (8b), however, second language learners can no longer apply the Subset Principle; instead, they will transfer the parameter setting from the first language. This hypothesis predicts that French learners of English will incorrectly assume the superset value, so they will produce and accept adjacency violations.

(8) a. the *subset* hypothesis: the Subset Principle operates in L2A as in L1A. French L2 learners should be able to adopt the correct English subset value for the adjacency parameter, so they should not permit adjacency violations in their L2.
b. the *transfer* hypothesis: L2 learners can no longer apply the Subset Principle to the L2 data; instead, they will transfer their L1 value. French L2 learners of English will incorrectly assume the superset value, so will produce and accept adjacency violations.

White tested 43 adults on three different tasks involving sentences such as those in (7). Her results for the multiple choice grammaticality judgement task are summarized in (9). She found

that the ESL subjects did not correctly reject adjacency violations, as they performed close to chance on these sentences. White concluded that this evidence supports the transfer hypothesis (8b) over the subset hypothesis (8a). So she concluded that the Subset Principle was not operative in these learners.

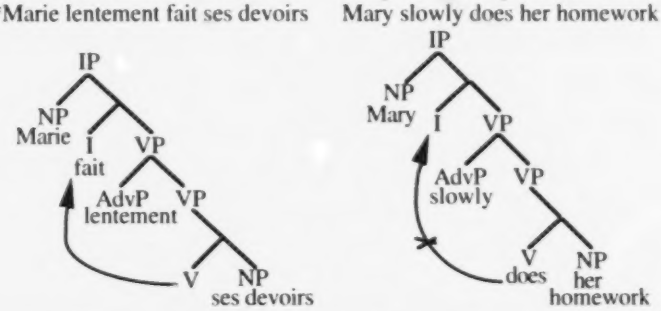
(9) Accuracy scores for multiple choice grammaticality judgement task, in percentages (from White, 1989b, summarizing White, 1989a)

	[- strict adjacency]	[+ strict adjacency]
Controls	90	100
ESL	57	90

However, within more current theory (e.g., Pollock, 1989), the contrast exhibited in (7) is explained by the phenomenon of verb raising. In French, tensed thematic verbs raise from V to INFL (I am simplifying the AGR and TENSE projections for exposition purposes) at S-structure, while English does not allow this movement (see the figure in (10)). The position of the adverb, then, is a result of verb raising. When the verb raises to INFL, the adverb appears between the verb and its arguments in the surface form, such as in French. If the verb does not raise, the adverb will surface to the left of it, as in English.

(10) Verb Raising (Pollock, 1989)

SVAO Marie fait lentement ses devoirs *Mary does slowly her homework
SAVO *Marie lentement fait ses devoirs Mary slowly does her homework



Under the verb raising explanation, English and French are not in subset-superset relations. French allows the surface sequence Subject-Verb-Adverb-Object while English does not (this is the contrast shown in (7)). However, English allows the sequence Subject-Adverb-Verb-Object while French does not. Since the Subset Principle is not relevant to verb raising, this evidence cannot be used to support the Subset Principle Difference Hypothesis.[2]

Configurationality

A second area that may be relevant to the current discussion is the proposed typological contrast between configurational and non-configurational languages (see, for example, Hale, 1982, 1983; Jelinek, 1984; Baker, 1991). Non-configurational languages (such as Warlpiri, Mohawk)

[2] In a recent series of experiments, White investigates adverb placement by French ESL learners in terms of the verb raising parameter (White, 1991; see also Schwartz and Gubala-Ryzak, 1992; White, 1992). While acknowledging that this parameter is not a subset parameter and that there should be positive evidence available to trigger parameter setting, White's results suggest that even when learners are flooded with the appropriate positive evidence, they do not reset the verb raising parameter to the correct target value.

are characterized by very free word order, discontinuous constituents, and null arguments, whereas configurational languages (e.g., English) generally have a fixed word order, do not allow discontinuous constituents, and require arguments to be expressed. It has been suggested that configurationality constitutes a parameter. Further, this parameter has been claimed to be a subset parameter (Zobl, 1988), with configurational languages representing the subset value and non-configurational languages representing the superset value, as non-configurational languages admit the word order possibilities of configurational languages, and more.

Assuming that configurationality is to be accounted for by a subset parameter, Zobl (1988) investigated the acquisition of this parameter by second language learners, with the aim of testing for the operation of the Subset Principle. Zobl adopts the proposal of Hale (1982), in which one difference between these two types of languages is that configurational languages project a hierarchical sentence structure, whereas non configurational languages project a flatter structure. This difference is illustrated in (11). One proposed consequence of this structural difference is that non-configurational languages will allow any type of constituent to appear between the verb and its object, while configurational languages will not allow such an intrusion.

(11) configurational (English) non-configurational (Warlpiri, Mohawk)

Zobl tested 38 adult Japanese ESL learners of varying proficiency. He assumes that Japanese is a non-configurational language. Given this assumption, his investigation is intended to test if learners whose first language instantiates the superset value can acquire the subset value of the target grammar. Zobl used a preference task where subjects were asked to mark the best position for a constituent in a given sentence. Each subject was tested on the 8 sentences shown in (12).

(12) a. I washed the glasses (carefully)
b. She writes long letters (very often)
c. The girl cut her birthday cake (with a knife)
d. I tried to make friends (very hard)
e. She asked me what I was doing (in a loud voice)
f. The student explained [to] the teacher (that he was tired)
g. I told the story to my friends (quickly)
h. I told my friends the story (quickly)

Zobl's hypothesis, summarized in (13), was that subjects with a configurational setting would not place the constituent between the verb and arguments (that is, within the VP), while subjects with a non-configurational setting would allow the constituent to be placed between the verb and arguments (these subjects would have no VP projection). The results, in (14), were that in 36% of the responses, the constituent was placed between the verb and its arguments. This response was given more frequently by less advanced subjects than by the more advanced subjects. Zobl concluded that the subjects initially adopted a non-configurational setting, but some were able to

acquire the correct configurational setting - they were able to move from a superset grammar to a subset grammar (time does not permit a discussion of Zobl's explanation for this learning, involving the parser and empty categories). According to Zobl, the adoption of the superset value as the initial setting contradicts the predictions of the Subset Principle.

(13) Zobl's hypothesis: subjects with a configurational setting would not place the constituent between the verb and arguments (within the VP); subjects with a non-configurational setting would allow the constituent to be placed between the verb and arguments (these subjects would have no VP projection).

(14) Zobl's results: in 36% of responses, the constituent was placed between the verb and arguments. This response was given more frequently by less advanced subjects than by more advanced subjects.

There are many problems with this experiment which make it impossible to conclude anything about the operation of the Subset Principle in these learners. First, there was no native speaker control group. Second, not all the test sentences are such that placing a constituent between the verb and object necessarily implicates a non-configurational parameter setting. For example, some test sentences, such as (12d), involve complements that may be extraposed, in which case it is acceptable to place the constituent between the verb and object. White (1989b) notes that when these extraposition sentences are excluded from analysis, only 29% of the responses could potentially support a non-configurational analysis. Additionally, for test sentences involving adverbial phrases, such as (12a, b), subjects could have incorrectly placed the adverbial phrase because they had acquired the wrong setting of the Verb-Raising parameter. If we exclude both the extraposition and the verb-raising sentences, only one sentence, sentence (12c), can be used as an indicator of configurationality. It is interesting to note that Zobl's subjects made few "errors" on this sentence, in comparison with the others.

Third, Zobl's assumption that Japanese is a non-configurational language has been disputed, in which case there is no difference between the configurationality parameter settings of the native and target grammars - both instantiate the subset value (see, for example, Saito, 1985; Kuroda, 1988).

Fourth, it is not clear that the configurationality parameter, as described by Zobl, is even a subset parameter. Consider that configurational languages have something that non-configurational languages lack: a VP constituent. In configurational languages, the existence of this VP constituent is evident in constructions such as VP-deletion, VP-pronominalization, and VP-fronting. Such constructions are not present in non-configurational languages (Baker, 1991). Given this difference, the configurationality parameter is not a subset parameter.

Finally, one must question whether configurationality is a parameter at all. In a recent paper on Mohawk by Baker (1991), non-configurationality is accounted for by the interaction of the Case Filter and the agreement morphology of the language - not by a binary parameter. Given all these problems, Zobl's work on configurationality cannot contribute any evidence, on way or another, to the Subset Principle Difference Hypothesis.

Parameterized Binding Theory

Binding theory is a third area in which the Subset Principle has been proposed to be involved. Manzini and Wexler (1987; see also Wexler and Manzini, 1987) contributes both a formal learning theory based on the Subset Principle and a parametric analysis of the crosslinguistic variation in binding possibilities. They slightly revise principles A and B of the binding theory as shown in (15), and they propose that what counts as a governing category or a proper antecedent is subject to parametric variation. This variation is captured by two independent parameters: the Governing Category Parameter (GCP) and the Proper Antecedent Parameter (PAP), shown in (16) and (17).

(15) A. An anaphor is bound in its governing category by a proper antecedent.
B. A pronominal is free in its governing category from all proper antecedents.

(16) *The Governing Category Parameter*

XP is a governing category for α iff

XP is the minimal category that contains α, a governor for α, and has

a. a subject; or (e.g., Eng. *himself;* Jap. *kare-zisin*)
b. an Infl; or
c. a Tense; or
d. a "referential" Tense; or
e. a "root" Tense. (e.g., Jap. *zibun*)

(17) *Proper Antecedent Parameter*

A proper antecedent for α is

a. a subject; or (e.g., Jap. *zibun*)
b. any element. (e.g., Eng. *himself;* Jap. *kare-zisin*)

Manzini and Wexler also propose the Lexical Parameterization Hypothesis in (18). This hypothesis states that parameters are set for individual lexical items, not for the grammar as a whole. It is a necessary addition to the parameterized binding theory, as the values of the binding parameters seem to vary both within a language and across languages. For example, Japanese has a long-distance anaphor *zibun*, which selects governing category (e) and proper antecedent (a), as well as a local anaphor *kare-zisin*, which, like English *himself*, selects governing category (a) and proper antecedent (b). In order to account for this intralanguage variation, the parameters must be associable with lexical items.

(18) *Lexical Parameterization Hypothesis*
Values of a parameter are associated not with particular grammars but with particular lexical items.

The Lexical Parameterization Hypothesis raises an interesting issue for second language acquisition which I believe has not been addressed. Many second language experiments have shown the influence of first language parameter settings on the second language grammar (see White, 1989b for an overview). How can language transfer be captured under the Lexical Parameterization Hypothesis? Are the parameter values associated with individual lexical items transferred onto lexical items in the second language? If so, which first language items are transferred, and onto which second language items? Because there is no one-to-one

correspondence between the lexicons of two languages, it becomes difficult to answer these questions. For example, as I have already mentioned, Japanese has two anaphors, *zibun* and *kare-zisin*, where English only has one, *himself*. So Japanese speakers learning English as a second language potentially have a choice as to which anaphor's parameter settings will be transferred onto English *himself*. In fact, it might be possible to transfer the governing category setting from one lexical item and the proper antecedent setting from another. For the cases where transfer does not occur (perhaps because of the lack of an equivalent item in the first language), then logically it might be predicted that second language acquisition would mimic first language acquisition, since second language learners would simply need to learn the new lexical items and their associated parameter values (Bonnie Schwartz, personal communication). Clearly, the consequences for second language acquisition theory of adopting a lexical parameterization approach need to be examined more carefully.

In any event, Manzini and Wexler show that, given the Lexical Parameterization Hypothesis, both the Governing Category and the Proper Antecedent parameters are subset parameters. For the Governing Category Parameter, value (a) is the subset value and value (e) is the most inclusive superset value. For the Proper Antecedent Parameter, value (a) is the subset value and value (b) is the superset value. The subset relationships for anaphors are summarized as markedness hierarchies in (19).

(19) Markedness hierarchies for the binding parameters

	Unmarked								Marked
GCP:	a	<	b	<	c	<	d	<	e
PAP:	a				<				b

I should note that Manzini and Wexler also propose that these parameters apply to pronominals, yielding markedness hierarchies opposite to those shown in (19). Unfortunately, time does not permit a discussion of the implications of this proposal; however, it is not uncontroversial. Briefly, it is not clear that pronouns are subject to the same parametric variation as anaphors; nor are the predictions of an opposite markedness hierarchy supported by any acquisition data. For discussion, I refer you to the references listed in (20) on the handout.

(20) For critique of the parameterized binding theory, see Hermon (1992), Kapur et al. (to appear), and MacLaughlin (1992).

Manzini and Wexler's proposals have served as a catalyst for a large body of research in both first and second language acquisition.[3] Second language studies investigating the acquisition of Manzini and Wexler's binding parameters are listed in (4). In what follows, I focus mainly on the study by Hirakawa (1990), and in particular, her results concerning the Governing Category Parameter.

Hirakawa tested 65 native Japanese speakers on their knowledge of English binding properties. In this situation, the first language has a long-distance anaphor *zibun*, which selects governing

[3] For a review of the first language results, see Grimshaw and Rosen (1990), Grodzinsky and Reinhart (1992), Hermon (1992), Kapur et al. (to appear), MacLaughlin (1992).

category (e), the superset value, while the second language instantiates the subset value. Again, the interesting question is whether or not these learners can acquire a subset parameter setting, given a superset value in the first language.[4]

Some test sentences used in the Hirakawa study are shown in (21).[5] These sentences involve anaphors in both finite and nonfinite embedded clauses. Subjects were asked to indicate who the anaphor referred to by circling one of a set of choices.

(21) Type 1: finite John said that Bill hit *himself*.
a. John b. Bill c. either John or Bill
d. someone else ___ e. don't know
Type 2: nonfinite Mary asked Ann to introduce *herself*.
a. Mary b. Ann c. either Mary or Ann
d. someone else ___ e. don't know

(22) Responses of L2 learners and 2 control groups, in percentages
(Adapted from Hirakawa, 1990 Table 6)

	Control (English) n = 20	L2 Learners n = 65	Control (Japanese) n = 22
[Type 1 - finite]			
long	1	17	63
local	99	77	26
long or local	0	6	9
[Type 2 - nonfinite]			
long	2	36	71
local	98	55	19
long or local	0	8	10

Notes: Choices of *don't know* or *someone else* have been removed by Hirakawa.
10 L2 learners responded 100% correctly.

The table in (22) summarizes Hirakawa's results for these two sentence types.[6] The results show that the second language learners incorrectly allow long-distance antecedents, so they do not appear to have acquired the correct governing category value for English. Those subjects who allow long distance binding out of tensed clauses must have governing category (e) - the same value as *zibun*, in the first language. However, Hirakawa argues that some subjects have acquired

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[4] Concerning the Proper Antecedent Parameter (PAP), this is a case where the L1 instantiates the subset value (PAP(a)) and the L2 instantiates the superset value (PAP(b)). Consequently, both the transfer and the subset hypotheses in (8) predict that the Japanese learners should be able to acquire the PAP value for English. This is, in fact, what Hirakawa finds. The L2 learners pattern with the native English control group on PAP test sentences.

[5] Hirakawa also included triclausal sentences such as those in (i) to test for knowledge of governing category.

(i) Type 3: finite Mary remembers that June said that Alice blamed herself.
Type 4: nonfinite Ann knows that Mary told June not to hate herself.

Learners were found to make more errors on type 3 sentences than on the related biclausal test sentence (type 1). However, learners performed equally well on type 4 and type 2 sentences (the biclausal and triclausal nonfinite sentences). Hirakawa interprets these results as suggesting that the subjects, while affected by level of embedding, were affected by infinitival clause structure even more.

[6] Thomas (1991), in her response to Finer (1991), discusses a problem exhibited by both Finer's and Hirakawa's data. In the context of Hirakawa's experiment, only two responses to type 1 and type 2 sentences are sanctioned by the parameterized binding theory:"local (only)" and "local or long." A response of "long (only)" is not compatible with the parameterized binding theory - yet both the Japanese control group and the L2 learners frequently provide this response. Thomas argues that these response patterns represent a pragmatic preference for a long-distance interpretation, not a syntactic constraint. While the subjects' underlying grammars actually allow multiple interpretations (as predicted by the parameterized binding theory), pragmatic factors operate to obscure the full range of interpretations, in which case the subjects do not report any ambiguity.

the correct (a) value, as some subjects (10 out of 65) responded 100% correctly (8 subjects made only one error).[7]

In sum, Hirakawa's results suggest that Japanese learners acquiring English initially transfer the first language parameter setting (of *zibun*) - so they start out with governing category (e). They are then able to acquire the English value, value (a). Importantly, they show a sequence of acquisition from a superset value to a subset value. How could this happen? There are (at least) three possible explanations. First, the learners could have used negative evidence, contrary to the original assumption that negative evidence is not available. However, this explanation cannot be supported, as these learners have not received any explicit instruction concerning the behavior of English reflexives, according to Hirakawa.

Second, the learners might have been able to notice the non-occurrence of long-distance binding in English, and use this indirect negative evidence to change their Governing Category Parameter setting. An explanation relying on learning from indirect negative evidence would need to be accompanied by a learning theory which could account for how this learning takes place - particularly, the circumstances under which a learner rules out (by changing the grammar) an unheard structure (see Pinker, 1989, for discussion). However, such a theory has yet to be proposed.

A third possibility is that there *is* positive evidence to trigger the acquisition of local binding, contrary to the parameterized binding theory. I would like to suggest that the morphological structure of the anaphoric element provides this piece of positive evidence. Several recent binding proposals, some of which are listed in (23), recognize the important role of the morphological structure of the anaphoric element, although these theories differ in their accounts of the long-distance binding mechanism.

(23) For recent binding proposals, see, for example, Pica, 1987; Cole, Hermon, and Sung, 1990; Reinhart and Reuland, 1991; Koster and Reuland, 1991 and references therein.

Specifically, morphologically simplex anaphors, that is, anaphors composed of a single reflexive element which is underspecified for Φ-features, such as Japanese *zibun*, may enter into long-distance binding relations. But morphologically complex anaphors, anaphors composed of a reflexive element plus a pronominal element with Φ-features, like English *himself*, may not be long-distance bound. This proposal is summarized in (24).

(24) Morphologically simplex anaphors composed of a single reflexive element which is underspecified for Φ-features(*zibun*) may be long-distance bound; morphologically complex anaphors composed of a reflexive element plus a pronominal element with Φ-features (*himself*) may not be long-distance bound.

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[7] Additionally, I found 3 subjects who responded with long-distance interpretations only out of nonfinite clauses, not out of finite clauses (6 subjects made only 1 long-distance error out of nonfinite clauses). This suggests that these learners may have acquired an intermediate governing category value (c or d) (this is also what Finer, 1991 suggests about his learners).

Japanese learners of English might initially analyze English anaphors as simplex, allowing them to be long-distance bound. Once they recognize the complex nature of the anaphor, they should only exhibit local binding. A consequence of the existence of this positive evidence is that the long-distance binding of anaphors no longer involves a subset problem, so the Subset Principle is not relevant. Therefore, this evidence cannot be used to support the hypothesis that the Subset Principle is not available to second language learners.

Logical Problems

All the experimental studies that we have examined today are intended to investigate the operation of the Subset Principle in second language acquisition, and they all follow a similar logic. First, a particular parameter is identified, and this parameter is claimed to be a subset parameter - a claim upon which the experiment crucially relies. If it turns out that the parameter is not actually a subset parameter, or is not a parameter at all, as we have seen in all 3 cases today, then the experiment cannot contribute any evidence to the issue of the Subset Principle's availability.

But let's assume, for the sake of argument, that a subset parameter could be identified, so that we can follow the rest of the logic underlying these experiments. Next, an experiment is conducted to test whether second language learners whose first language instantiates the superset value can acquire a grammar instantiating the subset value. It is assumed that if the Subset Principle is operating, the learners will start out with the subset value. If they do not start out with the subset value, for example, if they transfer the value from the native language, the Subset Principle must not be operating. In this way, transfer evidence has been used to support the conclusion that the Subset Principle is not available to L2 learners.

Notice that implicit in this logic is the assumption that transfer implies the non-operation of the Subset Principle; but there is no reason why this need be the case. Transfer and the Subset Principle are two different phenomena; one does not necessarily preclude the other. If transfer occurs before the Subset Principle can be invoked, then even though transfer would be responsible for determining the initial parameter setting, the Subset Principle might still be available to guide the learner through progressively larger parameter settings. This possibility is summarized in (25).

(25) the *transfer+subset* hypothesis: The Subset Principle does operate in L2A, but L2 learners initially transfer their L1 parameter setting, before the Subset Principle is invoked. The Subset Principle is then available to guide the learner through progressively larger parameter settings.

Conclusions

In conclusion, while the Subset Principle has frequently been the focus of second language research, the prevailing view up to this point has been that the Subset Principle is not available to second language learners - this view I have called the Subset Principle Difference Hypothesis. I have argued that this hypothesis cannot be maintained for two reasons. First, the experiments that

have led to this proposal do not in fact involve subset parameters, in which case the results are not relevant to the Subset Principle. Second, even if the experiments did involve subset parameters, there is an alternative interpretation which does not rule out the operation of the Subset Principle. So there is no evidence for this proposed difference between first and second language acquisition.

It is important to realize that while I have argued against the unavailability of the Subset Principle in second language acquisition, I have not been able to provide any evidence as to its availability. In order to do so, one would first need to find a subset parameter; however, to my knowledge there is no currently accepted parameter whose values generate languages in a subset-superset relation. This raises the question as to whether or not the Subset Principle is needed at all, for either first or second language acquisition. In other words, does a subset learning problem ever arise for UG parameters. In any event, until a subset parameter can be found and tested in L2 learners, the availability of the Subset Principle to L2 learners must remain an open question.

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